

STATIC BINDING OF DYNAMICALLY-DISPATCHED CALLS IN THE PRESENCE OF DYNAMIC LINKING AND LOADING

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ABSTRACT

Techniques for performing static binding of dispatched-calls in the presence of dynamic linking and loading are provided. A method for increasing the execution performance of a function at run-time includes compiling the function, which may either be interpreted or previously compiled, and identifying a call within the function to a process. The method also includes adding dependency information to the function. The dependency information is arranged to indicate a status of the function, and contains information pertaining to the class, the name, and the signature associated with the process. In one embodiment, the process is a virtual process, and the method includes analyzing a class structure associated with the function in order to determine when the virtual process is a substantially unique target of the call. In such an embodiment, the virtual process may be inlined into the function when it is determined that the virtual process is the substantially unique target of the call.